

Water Quality 101

Stacey Armstrong

Watershed Committee of the Ozarks

February 7th, 2012

Watershed Committee of the Ozarks

Our Mission:

“To preserve and improve the water supplies of Springfield and Greene County through education and effective management of the region’s watersheds.

**Keep the green here...
...not here.**

Save our Ozarks Water Quality

Your Septic Checklist

DO

- ✓ Do use certified installers, inspectors and pumpers on a schedule.
- ✓ Do keep septic tank cover accessible and locked.
- ✓ Do divert down spouts and sump pumps away from lateral field.
- ✓ Do read labels to find low-phosphate detergents.
- ✓ Do maintain good grass cover over lateral field.
- ✓ Do have health department test your well each year.
- ✓ Do repair plumbing leaks and conserve water to extend the life of your system.

DON'T

- ✗ Don't put grease, solvent, paint, kerosene, gasoline, motor oil, pesticide, chemical drain opener, septic tank additive or cooking fat into drains or toilets.
- ✗ Don't dig in, build over or drive on your lateral field.
- ✗ Don't allow trees and shrubs nearby (roots clog lateral lines).
- ✗ Don't go down into a septic tank (may contain deadly gases).
- ✗ Don't put any trash except toilet paper in toilet.

Funded in part by the Environmental Protection Agency

Watershed Committee of the Ozarks
417-836-8878 417-866-1127

UWRB
Upper White River Basin
417-334-7644

Table Rock Lake Water Quality, Inc.
417-739-4100

Call your health department for more information:

Barry County 417-846-1071	Polk County 417-326-7250
Christian County 417-581-7265	Stone County 417-357-6134
Dade County 417-637-2345	Taney County 417-546-7220
Greene County 417-864-1658	Webster County 417-859-6963

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Education



Demonstration

Karst Terrain in the Ozarks

- Geology: karst limestone and dolomite creates highly connected bedrock passages rapidly recharging groundwater



Greene County Public Drinking Water Sources



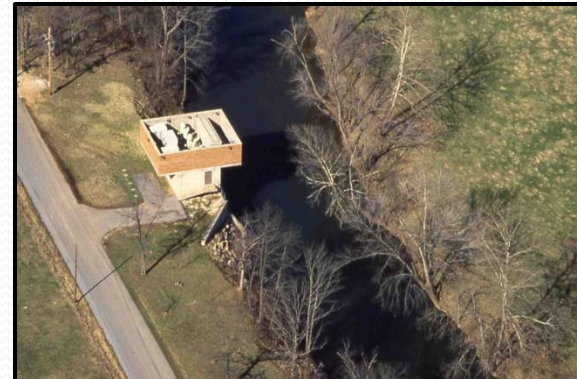
Fellows Lake



Fulbright Spring



McDaniel Lake



James River Blackman Intake

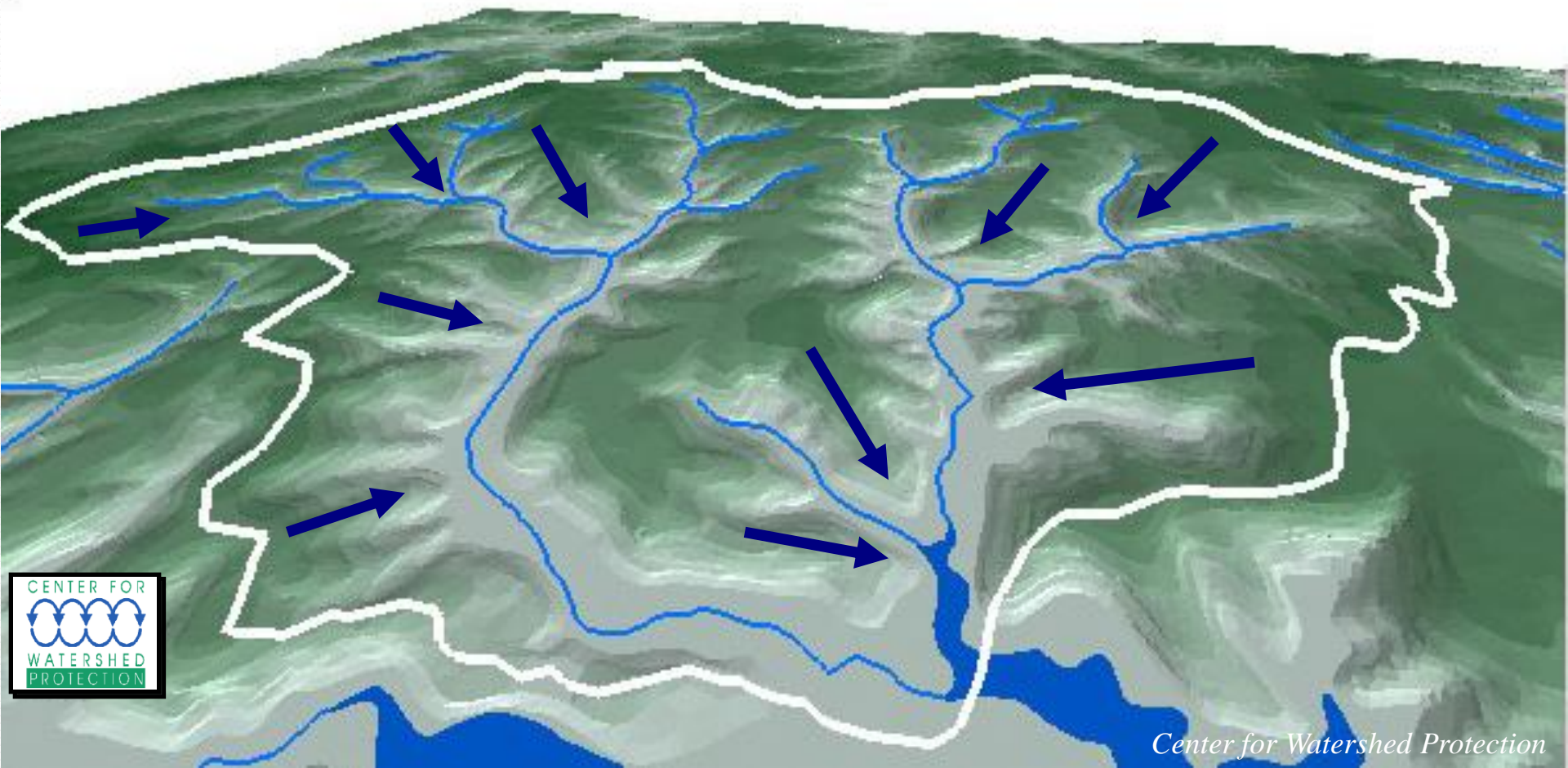
Groundwater: Source of Drinking Water

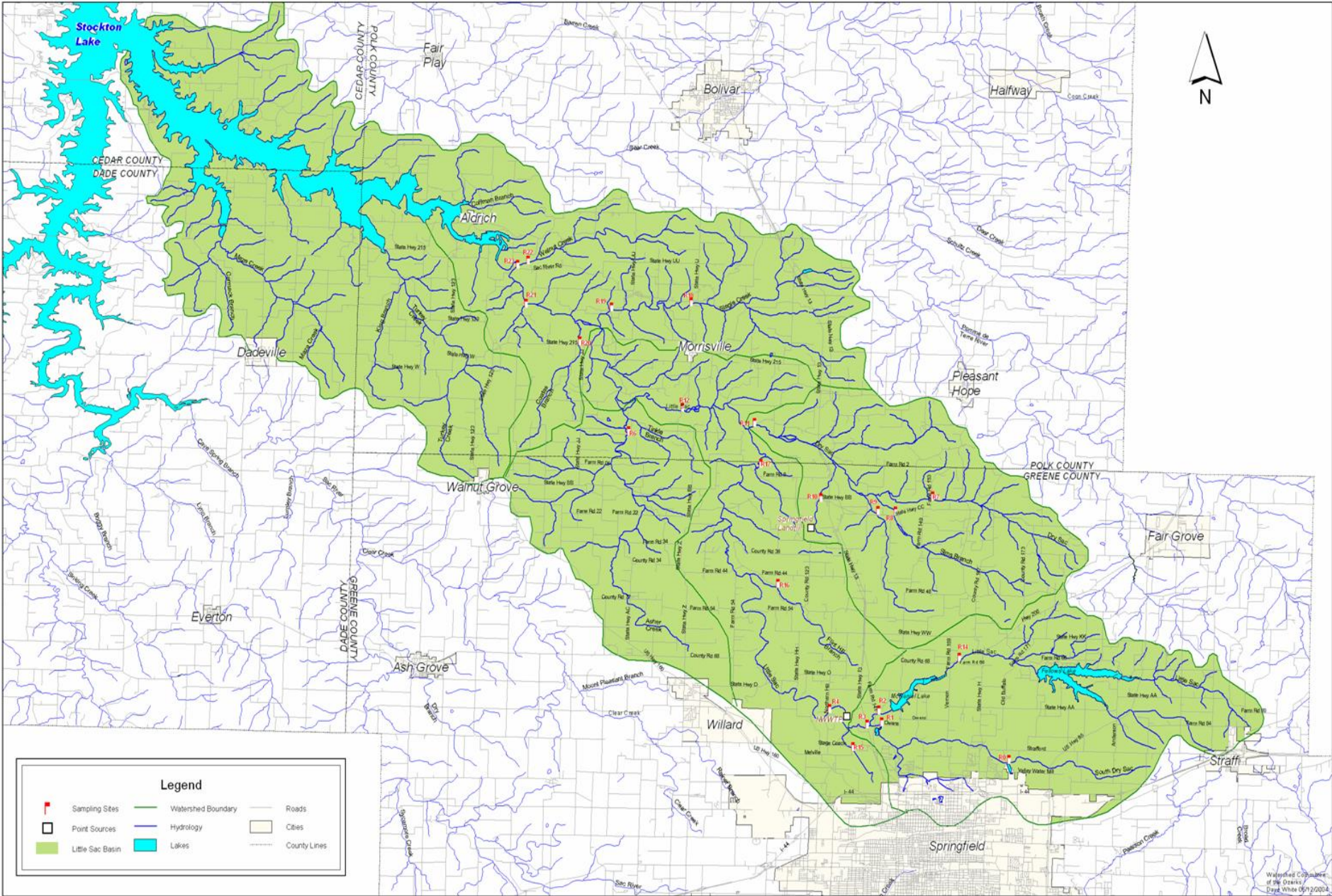
- Wells draw water from the underground aquifers to supply drinking water for more than 33% of Missouri residents
- Thousands of private wells in SW Missouri
- Shallow Springfield Aquifer and deep Ozark Aquifer




What Is a Watershed?

A watershed is the area of land that drains to a particular point along a stream







A river, lake or stream is only as healthy as its watershed.

We all live downstream



This map is not to scale.

What is Non-Point Source Pollution?

- Non-point source pollution is unlike pollution from industrial and sewage treatment plants, it comes from many diffuse sources.
- NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters.

What are the sources?

Types of Non-Point Source Pollutants

- Excess fertilizers, herbicides and insecticides from agricultural lands and residential areas
- Oil, grease and toxic chemicals from urban runoff and energy production
- Sediment from improperly managed construction sites, crop and forest lands, and eroding stream banks
- Bacteria and nutrients from livestock, pet wastes and faulty septic systems

How the pollution gets to the water...



Impervious Cover Can Transform a Watershed in Just a Few Years

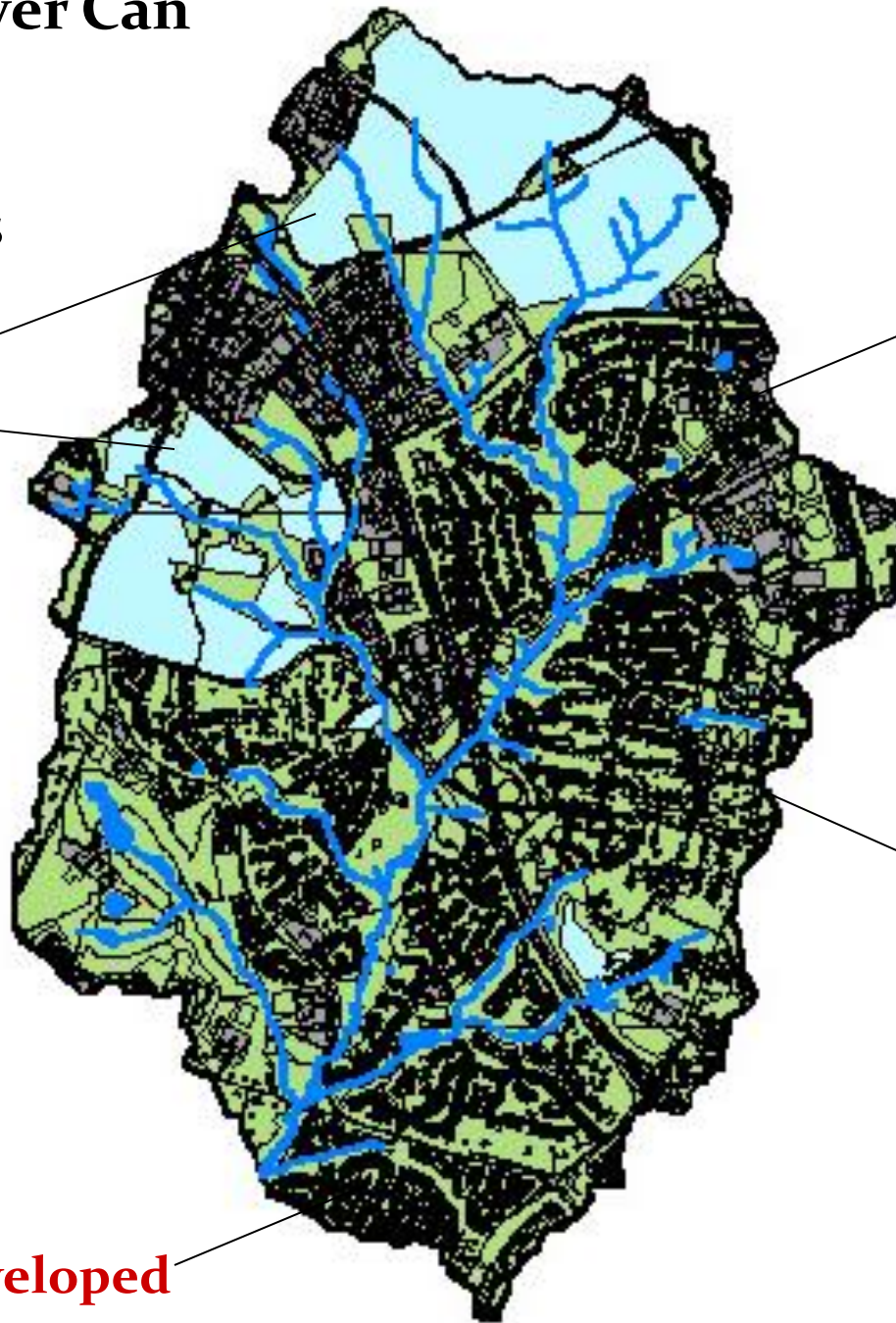
Under Construction

Developed

Existing Development

Developed

1990s



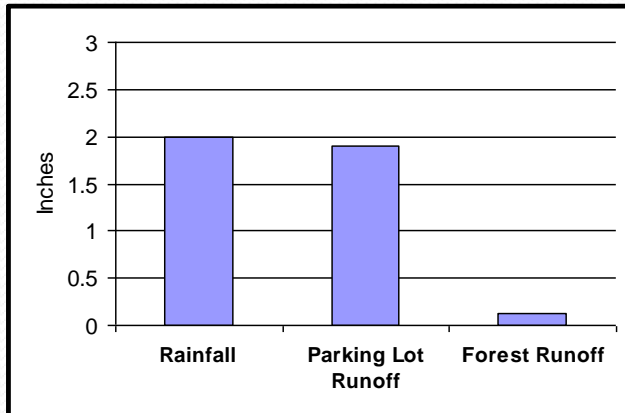
Stream Quality Is Related to Impervious Cover



- In a forest, rain soaks into the ground and is either taken up by tree roots or continues to move down through the soil and into the groundwater.



- When rain falls on impervious cover, it cannot soak into the ground and instead becomes stormwater runoff.



- Impervious cover produces 16 times more stormwater runoff than forest.

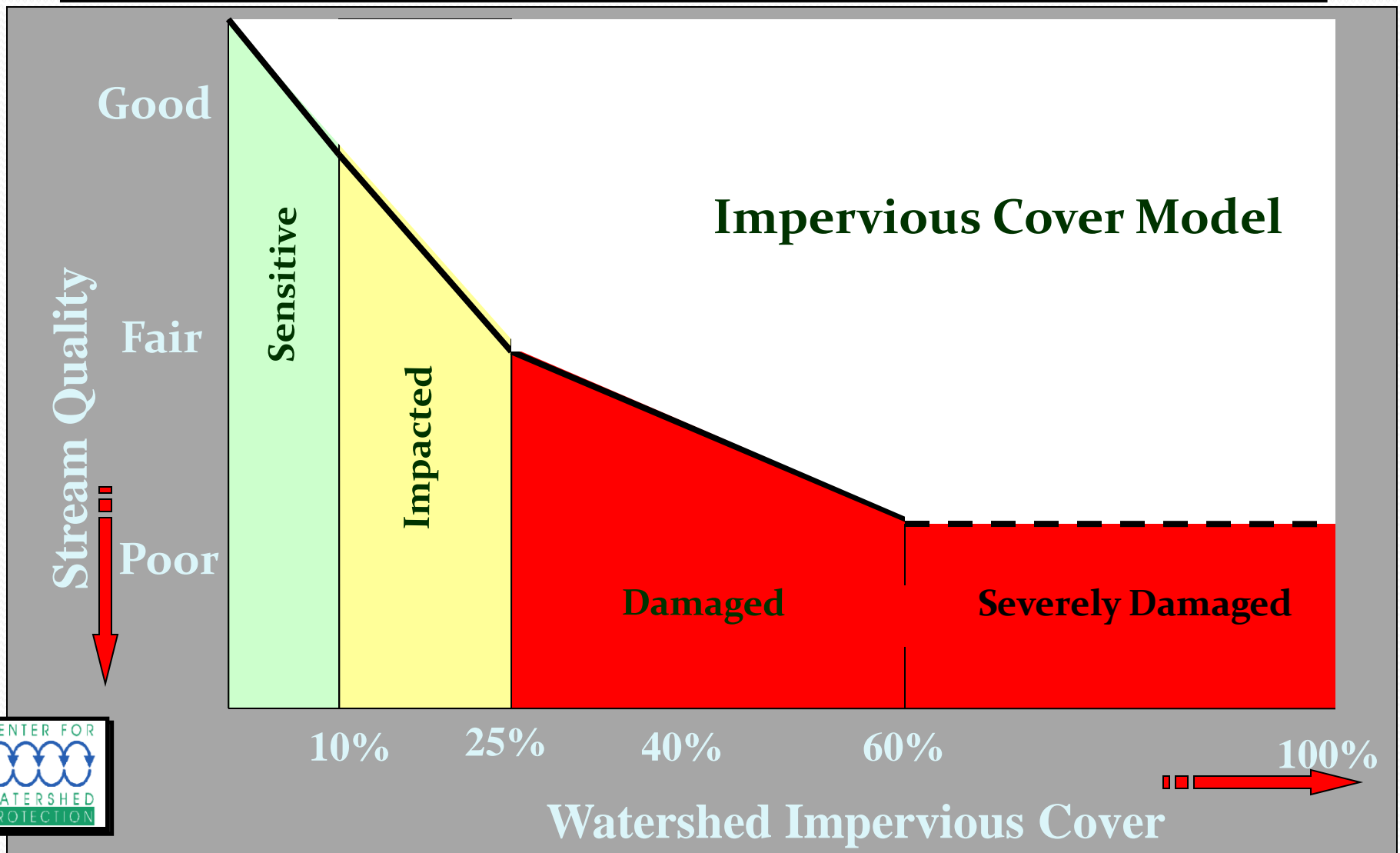
Stream Quality Is Related to Impervious Cover



Impervious Cover



Relationship Between Impervious Cover and Stream Quality



Impervious Cover Influences Wet Weather Stream Flow

When it rains, a large amount of water . . .



**Runs off of
impervious
surfaces**



**Enters the
stormdrain system**



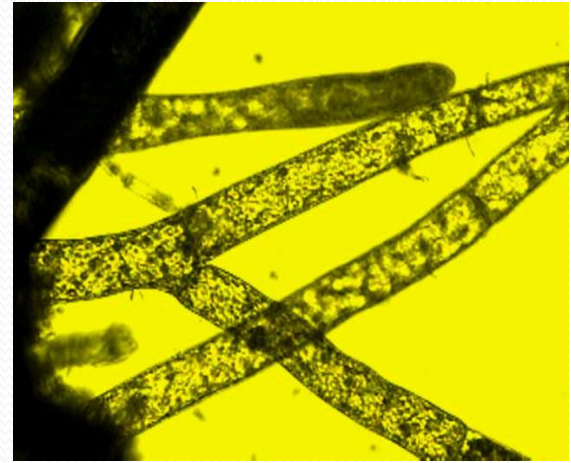
**Is directed straight to
the stream**

Impervious Cover Influences Water Quality

Pollutants build up on impervious surfaces and wash off into the stream system when it rains.



Nutrients=Plants



Filamentous Algae



It's all connected



What you can do to help


- Show-Me Yards and Neighbors
- Be Efficient and Conserve
- Implement Best Management Practices at home
- Get Involved!





www.bigurbie.org





Remember, ***your*** waterways
can only be as healthy as
your watershed!

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